

Management of Snake Bite Ulcer by Ayurvedic Formulation - A Case Report

Dr. Avinav Pandey¹, Dr. Usha Rana², Prof. Shiv Ji Gupta³

¹Department of Shalya Tantra, Banaras Hindu University, Varanasi, Uttar Pradesh, India

²Assistant Professor, Department of Shalya Tantra, Uttarakhand Ayurveda University, Dehradun, Uttarakhand, India

³Professor and Head, Department of Shalya Tantra, IMS BHU, Varanasi, Uttar Pradesh, India

ABSTRACT

In developed countries the most common chronic wound are leg ulcers. Ulcer can be defined as “a break in the epithelial continuity”¹ a chronic ulcer unresponsive to dressing and simple treatment, should be biopsied to rule out neo plastic change. Surgical treatment is only indicated if non operative treatment has failed or if the patient suffers from intractable pain. Wound healing is a mechanism whereby the body attempts to restore the integrity of the injured part delayed healing may result in loss of function or poor cosmetic outcome. Here we are reporting a case of snake bite ulcer in a 37 yr male patient since 1999. This case was treated in IPD with only Ayurvedic preparations followed by regular cleaning and dressing with normal saline and prapaundrikadi ghrita for approx two months. 2 months procedure resulted in complete wound healing and restored ability to perform daily routine. Prapaundrikadi Ghrita in this case resulted in enhancing wound healing in this patient.

How to cite this paper: Dr. Avinav Pandey | Dr. Usha Rana | Prof. Shiv Ji Gupta "Management of Snake Bite Ulcer by Ayurvedic Formulation - A Case Report"

Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-7 | Issue-3, June 2023, pp.287-291, URL: www.ijtsrd.com/papers/ijtsrd56369.pdf

Copyright © 2023 by author (s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



IJTSRD56369



INTRODUCTION

Snakebite may be a life-threatening emergency that poses a serious concern in tropical and subtropical countries. About five million snake bites occur each year and resulting 81,000–138,000 deaths annually worldwide². Snakebite causes both local and systemic effects. The snake bites primarily cause local complications like bleeding. Other features of a snake bite are mainly pain, swelling ecchymosis, blisters, and cellulites'. Snake venom has proteolytic properties those leads to extensive tissue necrosis. Snake venom has platelet aggregating activity which produces thrombocytopenia and hypofibrinogenemia. As a result, they cause local venous vasculopathy causing swelling, blisters and necrosis then this site becomes a source for bacterial colonization. The oral flora of the snake also contains multiple

microorganisms which again act as a source for secondary bacterial infection. In general, ulcers are managed by using infection control methods, ulcer healing, surgical repair, fasciotomy, and amputation but these modalities have gotten the restrictions and also leads to few complications.

Classics mentioned *Dirgha kala anubandhativam*³ (chronic in nature) to point chronic ulcers (*Dusta vrana*). It is a sort of *Vrana* with vitiated *Tridoshas* that's difficult to heal, presence of *Srava* (discharge), *Putipuyamamsa* (slough with pus), *Vedana* (pain), etc., The signs and symptoms of *Dusta vrana* are mentioned in the classics are *Ativivrita* (having broad base), *Bhairava* (ugly look), *Gandha*, *Putipuya mamsa*, *Vedana*, and *Dirgha kala anubhandi* Such manifestations are *Kricchrasadhya* (difficult to treat).

Ingredients of prapaundrikadi ghrita⁴

Plant name	Botanical name	Property	Part used
Prapaundrika	Sacchram officinarum	Antibacterial, Anti-oxidant, anti-inflammatory	Root
Manjistha	Rubia cordifolia	Anti inflammatory, antibacterial	Root
Madhuka	Glycirhiza glabra	Anti microbial anti oxidant, anti inflammatory	Stem
Usheer	Viteveria zizanoides	Anti bacterial	Root
Padhmak	Prunus cerasoides	Anti oxidant anti bacterial	Twak and beej majja
Haridra	Curcuma longa	Anti microbial	Stem

Prapaundrikadi Ghrita is indicated in healing of wounds in *Chakradutta* in the chapter no **44 in Vrana Sotha Adhikara**, for this study this drug was procured from department of Shalya Tantra, Faculty of Ayurveda, Institute of Medical Sciences Banaras Hindu University.

CASE REPORT- A 37 year male patient visited our *Vranopchar OPD* with chief complain of-left leg wound associated with redness swelling pain during walking with watery discharge from the wound.

P/H (Past History)-In the year **1999** he was bitten by a snake and as a result of the poison the affected area become blackish in color along with pus discharge, he consulted a doctor nearby and started his treatment with the passage of time and due to the effect of medication the wound was healed

In the year **2013**-he was hit by a bat while playing cricket on the same place then he was admitted in BHU Ayurveda wing for proper management, skin graft was performed but it was not successful, later on the wound was healed and he was discharged from the hospital.

In the year **2020**-he was again hit by a piece of brick exactly at the same place due to this the skin of that area was lost and a wound was created having features of reddish discoloration, pain watery discharge and swelling near the affected wound, for this he again came to S.S. Hospital B.H.U. Ayurveda wing and got admitted on 04/03/2021 for better management.

General examination- Pallor, icterus, cyanosis, clubbing, edema were absent

Lymphadenopathy- Absent

Systemic examination-

Central Nervous System- Conscious, co-operative, well-oriented to person, place and time.

Cardiovascular System - Both S1 and S2 normal, No any cardiac murmur heard

Respiratory System -Trachea centrally placed, B/L equal chest expansion, B/L equal air entry, Bronchovesicular sound normal

Per Abdomen (GIT)- Umbilicus is centrally placed and inverted, Abdomen soft and nontender, No any organomegally,

Physical examination of the wound-**A. INSPECTION**

Size (Lxw) = 10.4cm x5.2cm (54.08sq cm), Depth= Partial thickness skin loss involving epidermis and dermis, Anatomical location= Medial aspect of left leg above medial malleolus, Edges= Well defined, not attached to base, rolled under, thickened, Exudates type= Serous, thin watery and clear, Exudates amount= Small, Granulation tissue= Bright beefy red, Epithelization= <25% wound covered, Skin color surrounding wound= Black

B. PALPATION-

Peripheral tissue edema= Non pitting edema extends <4 cm around wound, Peripheral tissue induration = <2 cm around wound, Temp= Afebrile

Pathological test and routine investigations- CBC

Hb=13.10gm/dl, RBC=4.58x10⁶/ul, WBC=7.56x10³/ul, PLT=241x10³/ul

RBS=96mg/dl

Plan of wound management-

Plan	Drug used/given	Duration
Trayodashang guggulu	2 bd (500mg bd)	2 months
Aamlaki rasayana	1tsf bd (3 gm bd)	2 months
Ashwagandha churna	1 tsf bd (3 gm bd)	2 months
Prapaundrikadi ghrita	For local application over the wound area	2 months

OUTCOME-

Depth-Non-blanchable erythema on intact skin, Edge-Indistinct, diffuse none clearly visible, Exudates amount- Dry wound/none, Exudates type- None, Granulation tissue-Skin intact, Epithelization-100% wound covered, surface intact.

(Discussion) Probable mode of action of different drugs:

Trayodashang guggulu⁵-It is an important Ayurvedic formulation used in the Ayurvedic system of medicine for treatment of various inflammatory conditions, It work as inhibition of albumin denaturation, membrane stabilization, antilipoxygenase and antiproteinase activity its possess anti inflammatory as well as antioxidant activity.

Amalaki rasayana⁶-One of the strongest antioxidant of Ayurveda which besides supplementing nutrients get obviate these free radicals, it is found to be anti inflammatory and antipyretic, extract of its fruit possess analgesic effect, it also possess antimicrobial activity against klebsiella pneumoniae, pseudomonas and E.coli and having immune stimulant activity

Ashwagandha churna⁷ - Withania somnifera is a plant which is being used since long long time in ayurveda, extracts of its roots contain many bioactive chemical constituent including alkaloids, glycosides, steroids, terpenoids, saponins, tannins and reducing sugar which shows the activity of anti- inflammatory, antispasmodic and analgesic action.

Prapaundrikadi ghrita-This drug is described by Acharya *Chakradutta* in the chapter *Vrana Sotha Adhikara* for the purpose of wound healing, it contain few Ayurvedic plants(6) which have the following activity in the process of wound healing.

*Saccharum officinarum*⁸⁻⁹-The bark of sugarcane demonstrate a strong antibacterial activity on gram negative bacteria indicating its high antibacterial potential and effectiveness in the treatment of wound infection. Its flavonoid has been reported to possess anti inflammatory activity it also possess antioxidant activity

*Rubia cardifolia*¹⁰-Extract of rubia cardifolia shows marked infiltration of the inflammatory cells, it increases the blood vessel formation and enhanced

proliferation of cells, this drug prevents the prolongation of inflammatory phase, tannins and anthraquinones are major phytoconstituent present in this plant which may be required for wound healing it also have antibacterial effect along with antiinflammatory effect which is studied in rats at a dose of 10-20ml/kg of water extracts

*Glycyrrhiza glabra*¹¹⁻¹²-Its aqueous extract of leaves possess the ability of wound healing by decreasing the level of wound area, increase the percentage of wound contraction and decrease pus discharge. It is also active against some bacteria like E.coli, staphylococcus aureus, pseudomonas fluorescens.

*Vitex zizanioides*¹³-Its found to be an effective antibacterial agent which also possess antifungal activity

*Prunus cerasoides*¹⁴ - Its phytoconstituent shows the activity of antipyretic antioxidant anti-inflammatory and analgesics. some studies revealed that it contains antimicrobial activity against both gram positive as well as gram negative bacteria.

*Curcuma longa*¹⁵⁻¹⁷-This plant is having a active ingredients which is curcumin having analgesic and anti inflammatory effect, it contain vitamin A,B and C which have an important role in the healing of wounds and regeneration. turmeric end in early synthesis of collagen fibre by mimicking fibroblast activity. It also acts as antioxidant as free radicals are considered to be the major cause of inflammation during wound healing process, curcumin application on wounds enhances epithelial regeneration and increase fibroblast proliferation and vascular density also found to be increase cutaneous wound healing through involvement in tissue remodeling granulation tissue formation and collagen deposition.

Conclusion-Leg ulcer are common and very debilitating and carry a huge impact on the patient life. venous ulcers are the most common of all ulceration followed by arterial and mixed variety. Chronic leg ulcers have a profound economic psychical and social effect on the lives of the patient and their immediate families. so there is need for better understanding of the complex biological mechanism of wound healing but also to harness the technology for development of better wound care products which help in the early healing of chronic

wounds thereby minimizing the cost of treatment and the socioeconomic burden. There should be a good approach to investigate these patients to make a proper diagnosis so that a appropriate treatment may be started soon.



Day 1st



Day 20th



Day 40th



Day 60th

References

- [1] M Bhat SriRam. Wounds and Wound Healing. SRB Manual of Surgery. 4th ed. New Delhi, Jaypee Brothers Medical Publishers (P) Ltd, 2013: 1-2.
- [2] Hanchinamane NR. Ayurvedic management of non-healing ulcer caused by viper bite: A case report. J Ayurveda Case Rep 2020; 3:133-7
- [3] Acharya YT, editor. Commentary Nibandha Sangraha of Dalhancharya on Sushruta Samhita of Sushruta, Sutra Sthana. Ch. 15, Varanasi: Chaukhamba Surbharati Prakashan; 2014.
- [4] Tripathi Indradev, vranasoth chikitsa. Chakardatta Samhita, Chaukhambha Sanskrit Bhavan Publication, verses, 2012; 92.
- [5] Dadoriya Priyanka, Dey Nandan Yadu, Sharma Deepti "et al." In-vitro anti-inflammatory and antioxidant activities of an Ayurvedic formulation –Trayodashang guggulu. Journal of Herbal Medicine.2020; 23: 100366
- [6] Bhat M Pravin, Umale Hari, Lahankar Madhukar. Amalaki: A review on functional and pharmacological properties. Journal of Pharmacognosy and phytochemistry. 2019; 8(3): 4378-4381
- [7] Meher kumar Sudhanshu, Das Banmali, Panda purnendu "et al." Use of withania somnifera (linn) Dunal (Ashwagandha) in Ayurveda and its Pharmacological Evidences. Research Journal of Pharmacology and Pharmacodynamics. 2016; 8(1): 23-28
- [8] Ghiware Nitin, Naimuddin Aseemuddin, Kawade Rajendra.etal. Antiulcer activity of saccharum officinarum leaves extracts on experimental animal models. Indo American Journal of Pharmaceutical Research, 2014; 4(3): 1513-1518
- [9] Uchenna Frank Eneh, Adaeze Amara Okechukwu, Steve Chukwuemeka Adindu. Phytochemical and Antimicrobial Properties of the Aqueous Ethanolic Extract of Saccharum officinarum (Sugarcane) Bark. Journal of Agricultural Science.2015; 7(10):291-297
- [10] Verma Anuradha, Kumar Babita, Alam perwaiz " et al." Rubia Cordifolia– A Review On Pharmacognosy And phytochemistry. International Journal of Pharmaceutical Sciences and Research.2016; Vol. 7(7): 2720-2731.
- [11] Zangeneh Akram, Pooyanmehr Mehrdad, Zangeneh Mahdi Mohammad "et al."

- Therapeutic effects of Glycyrrhiza glabra aqueous extract ointment on cutaneous wound healing in Sprague Dawley male rats Comparative Clinical Pathology.2019; 28(5): 1507-1514
- [12] Dr Snafi Al esmail Ali. Glycyrrhiza glabra: A phytochemical and pharmacological review. IOSR Journal of Pharmacy.2018; 8(6):1-17
- [13] Orchard Ane, Viljoen Alvaro, Vuuren van Sandy. Wound Pathogens: Investigating Antimicrobial Activity of Commercial Essential Oil Combinations against Reference Strains Chem. Biodiversity 2018;15(12):1-29
- [14] Arora singh Daljit, Mahajan Himadri. Major Phytoconstituents of Prunus cerasoides Responsible for Antimicrobial and Anti biofilm Potential against Some Reference Strains of Pathogenic Bacteria and Clinical Isolates of MRSA. Applied Biochemistry and Biotechnology.2019; 188(4):1185-1204.
- [15] Maghima M, Alharbi ali Sulaiman. Green synthesis of silver nanoparticles from Curcuma longa L. and coating on the cotton fabrics for antimicrobial applications and wound healing activity. Journal of Photochemistry & Photobiology, B: Biology.2020; 204: 1-4
- [16] Kundu Subarna Biswas Kanti Tuhin, Das Partha 'et al.' Turmeric (Curcuma longa) Rhizome Paste and Honey Show Similar Wound Healing Potential: A Preclinical Study in Rabbits. Lower extremity wounds. 2005; 4(4): 205–213
- [17] Dania Akbik dania, Ghadiri maliheh, Chrzanowsk Wojciech. Curcumin as a wound healing agent. Life Sciences.2014;116(1):1-7

